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[From the Hanover Central Blatt.

## Practical Bee-Culture.

Can the brooding chamber of moveable comb hives be kept free from drone comb without regularly cutting it out? And how are cottage hives to be managed in this respect?

These are very important questions, which have been warmly discussed, and may lead to further debate. But when the purpose is to ascertain and determine useful processes, it is well not to shrink from ardent controversy; which, in the case of bee-keepers, may indeed be attended by a few stings, but draws no blood. I will, therefore, venture to defend a practical process, which I have found useful and important.

It is well known that in some districts bees are much more inclined, than in others, to build drone comb and rear drone brood in spring and early summer. Why this is so, I shall not here inquire, contenting myself with noticing the fact, and observing, too, that the Italian bees are less inclined to do so than the common black bees, and are therefore to be preferred.

If in my locality the bees were allowed free scope in their propensity to build drone comb, the cells would be sooner or later supplied with eggs, and the result would be the production of such *masses of drones* that we could never calculate on securing any surplus honey. Drones are notoriously not producers, but consumers of honey. They gather none, but simply live on that gathered by the workers. Hence the more drones a colony contains the less honey may it be expected to produce; and drone comb situated in a hive where it may serve as brood-comb, is decidedly disadvantageous and injurious.

But drone-comb is injurious only in the brooding chamber. Where, on the contrary, honey is stored, drone-comb is not disadvantageous, but rather beneficial, inasmuch as the larger sized drone cells will contain more honey, and their construction involves less labor and a smaller expenditure of material. In hives containing a separate storeroom for the deposit of honey, and from which the queen is excluded, bees may be allowed to build drone-comb freely, because there it will be useful rather than other-

wise. Drone-comb which happens to be built in the brooding chamber, should also be transferred to the storeroom—thus removing it from where it would be injurious, and placing it where it will be beneficial.

Now, how is the object aimed at to be most easily accomplished? We all concur in the conviction that it is of the utmost importance to keep the brooding chamber free from drone-comb. They are two modes by which the desired result may be secured. The one, which may be called the *old* method, consists in persistently cutting out the drone-comb as regularly as it is built, and so long as it is built. This is the method employed by those who keep bees in cottage hives, and is the proper method for such hives. The second or *new* method is available only when movable comb hives are used, and is based on this fundamental principle, not to permit bees to build comb in the brooding chamber, so soon as they begin to build drone-comb; but to insert therein immediately frames containing empty worker-comb, and transferring to the storeroom or surplus boxes any drone-comb which may have been built.

The question now recurs, which of these two methods is most advantageous in practical bee-culture? Where cottage hives are used, the first method is the only one that can be employed; but those are evidently wrong who regard it as the most profitable also, because they are thus enabled to sell a proportionately larger quantity of wax. It is undoubtedly true that he who has much wax to sell can realize a handsome sum of money. Nevertheless, I cannot but regard the wax production and wax selling incidental to cottage bee-culture, as an unavoidable evil, and by no means as an advantage.

This leads to another important inquiry: Can the old method, or the regular cutting out and removal of drone-comb, be recommended as advantageous to those who employ movable comb hives? Because of its importance, let us examine the matter a little more closely, and investigate in what relation comb building stands to the consumption of honey, and what are its effects on the progress of the colony as regards the production of brood and the accumulation of stores.

Stock feeders make a distinction between the food required simply for the sustenance of the animal and that required for the production of fat. The former is only what is needed for the support of life; the latter is that additional quantity which every animal doomed to labor or designed to be fattened must consume. The case is precisely similar in bee-culture. During the winter, the period of rest and repose, extending, perhaps, from the beginning of November to the close of February, bees consume comparatively little honey, because then nature designs the mere preservation of life. But so soon as activity is resumed in the hive, when brooding recommences, and in proportion as it increases, the consumption of honey is enhanced. But consumption reaches its acme when, in addition to enlarged brooding, wax—which is the *fat* of these insects—has to be liberally supplied by them for comb building; and bees thus engaged are the largest consumers of honey. Repeated experiments and investigations have shown that, for the production of one pound of wax, from ten to twenty pounds of honey are consumed. This result is indeed much modified in practice by the influence of various circumstances; but the general fact that bees consume most honey when engaged in comb building is universally conceded.

The experience of every observant practical bee-keeper corroborates this statement. Place one swarm, in the spring, when the weather is favorable and pasturage moderately plenty, in a hive furnished with empty worker comb; and another in an empty hive, and you will find a very decided difference in the progress they make. Let the weather after a while become unpropitious, and the latter colony may need feeding to keep it from starving, while the former has quite a sufficiency of stores—and this, though both have been equally industrious in outdoor labor, and carried in equal quantities of honey. The reason of the difference between them is simply this, the latter had to build combs, and was constrained to convert into wax nearly all the honey it had gathered. Where movable comb hives are used the difference can be rendered more palpable, by supplying one colony with frames filled with empty comb, and requiring another to build all the comb it needs.

The difference is still greater and more obvious when pasturage is very abundant, because then usually the construction or enlargement of combs cannot be made to keep pace with the supplies gathered, and requiring storage room. I have known an instance where a colony regularly supplied with empty combs as fast as needed, had stored five times as much honey at the close of the season as another equally strong, which had to build its own comb; and after making due allowance for the empty combs furnished, the yield was still fourfold greater. In my practice formerly I used sectional cylindrical straw hives. These hives enabled me to remove the sections containing empty combs, and reserve them for use the ensuing season. If then, at the height of the gathering season, I removed the cover from one of my hives and supered one of these sections,

and gave to another colony an empty section, the difference in productiveness between the two was speedily seen. Commonly those who use cottage hives, set an empty section or box under when the bees have filled their hive, if forage is still plentiful. If they were able to supply their bees with empty combs at that time, the yield of honey would be three or four times as great in the same period.

These investigations and facts show:

*First.* That bees require a great deal of honey when building combs; and

*Secondly.* That colonies which are constrained to build comb during the honey season, will make much less progress in the production of brood and accumulation of honey, than those which are supplied with empty combs.

This is quite natural. A farmer who would have to build a barn during harvest to receive and shelter his grain, would need many more laborers to enable him to get through with his work, than one who has a barn ready built before harvest begins. But the system of cutting out drone-comb results in proportionately much greater injury, for here the bees do not construct their combs to serve as receptacles for brood or honey, but literally to be appropriated by the pruning knife of the bee-keeper. The honey used, the time spent, and the labor bestowed, are all consequently a dead loss to the bees themselves. The work is a sort of Sisyphean labor, never ending, still beginning.

It is hence evident that the regular removal of drone-comb in cottage hives is only to be regarded as a necessary evil. It resembles the subduing of a weed which we cannot extirpate, but which we have to mow down frequently to prevent it from running to seed and producing still more extensive injury. But if, in using cottage hives, we were able to adopt the method employed where movable hives are used, that is, if as soon as the bees begin to build drone-comb, we could at once supply them with empty worker-comb, and thereby prevent the construction of worker-comb in the brooding chamber, we should secure the following advantages:

*First.* The bee-keeper would be exempted from the arduous and disagreeable labor of daily removing drone-comb.

*Secondly.* The bees would not have the task imposed on them of replacing daily the drone-comb thus removed, but could, instead, save and store up the honey needed for the production of wax, and devote their time to more useful labor.

*Thirdly.* The worker-combs thus inserted would in the usual course be supplied with worker-brood; the colony would thus more speedily become populous, than where drone-comb is daily pruned away and daily rebuilt; and the labor of the bees is thus turned in a more profitable direction.

But unfortunately the insertion of worker-comb is, in cottage hives, unfeasible, and there is consequently no alternative, where such hives are used, but to resort to the regular removal of drone-comb as fast as it is built, and in this way of two evils to choose the least.

The case, however, is totally different where movable comb hives are used. Where the combs can be changed or moved from place to place, and the brooding chamber separated by a partition from the store-chamber, we have it in our power to keep the brooding chamber entirely free from drone-comb, without having recourse to the pruning knife. This position, assumed and maintained by me years ago, has been attacked and opposed by several eminent bee-keepers. They admit the advantage accruing from keeping out drone-comb without the use of the knife, but deny that it is possible to do so under existing circumstances; and it will be my task to show that the thing can be done.

It might, perhaps, suffice to say that *what has been done, and is still done, must be possible*. In my apiary I have for some five years past kept the brooding chamber of my hives altogether free from drone-comb, without ever using the knife. I have succeeded in accomplishing this, not only with Italian bees, but with black bees also. Even this year, when in consequence of large sales of Italian bees, I was compelled to buy nearly a hundred swarms of black bees, I have still been successful in this matter. Hence, that which is practicable in the hands of one individual, must certainly be possible, even though not every one can accomplish it.

Those who seek for information and instruction, as well as those who controvert my position, will, doubtless, be ready now to propound the inquiry: "How are we to proceed in order to keep the brooding chamber free from drone-comb, without recourse to the pruning knife?" My process is quite simple. So long as the bees build worker-comb I let them build. But so soon as they begin to build drone-comb, I do not permit them to build in the brooding chamber, but insert full sheets of empty worker-comb. If any drone-combs have in the meantime been built, I remove them at once and use them in the honey chamber, between which and the brooding chamber I introduce a division board. Having then their brooding chamber fully supplied with worker-comb, the bees have no room there for the construction of drone-comb. In due time I give them admittance to the honey chamber, where they may build drone-comb if they choose to do so, because it can do no injury there, but is on the contrary rather advantageous. Such, on the whole, is my mode of proceeding, which certainly, it seems to me, is simple enough, and easily comprehended.

It may, indeed, be objected: "All this is very fine, but where do you obtain the required full sheets of empty worker-comb, which you need for filling out the brooding chamber?" This is undoubtedly the puzzling question, which many find it difficult to solve; and I therefore subjoin a brief elucidation of the manner in which I manage so as to provide a supply of worker-combs. In the first place I never melt up any combs while they remain in a condition to be acceptable to the bees; and in the fall all the combs I have on hand are carefully

assorted, the worker combs being selected from the drone-combs, and each of these again separated into classes so as to have full combs, half finished, and quarter finished combs, in distinct lots. Thus assorted and arranged, they are placed for the winter in two chambers, in which I keep my apiarian implements and apparatus, and which are large enough besides to receive 3,000 full built frames. Some of the combs containing honey are reserved for spring, and others are emptied by means of the centrifugal honey extractor. When the spring opens, and the bees begin to work, I avail myself of every opportunity to let them build worker-combs, or to complete the half finished or quarter finished combs on hand. Not much, however, can be accomplished in this way before the swarming season, and the bee-keepers must, therefore, strive to turn that season and the period of making artificial colonies to account. I never give a swarm full built combs, but only such as are partially built up, and I generally secure four full built worker-combs from each. As soon as a swarm begins to build drone comb, I stop that work by removing the combs containing drone cells and inserting full worker-combs instead, and then filling out the brooding chamber with such.

A chief means of obtaining full built worker-combs is this, to remove from colonies that contain full combs, and are in a condition to build worker-comb, all the full combs which have no brood, and insert partially finished worker-combs instead. Every after-swarm, and every artificial colony containing a young queen, will be in such a condition, so soon as the young queen is fertilized and begins to lay. The bees will then build worker-combs exclusively, and advantage must accordingly be taken of this their propensity at the time. All full built combs should at once be removed and reserved for future use, and frames with worker guide comb or unfinished worker-comb be substituted. By this means I not unfrequently obtain more full built worker-combs in a brief period during and after the swarming season than I subsequently find it necessary to return. Before the invention of the honey comb emptying machine, I used to raze the cells on each side of the comb, cutting them down close to their foundations, thereby securing the honey and some wax, and and reinserting the razed combs in the hive where the cells were quickly rebuilt by the bees. I also made considerable use of artificial comb foundations made of wax. Artificial combs, having cells of nearly full depth, I have found too costly, and of little use, as being rude imitations which the bees would reject or reconstruct.

DATHE.

Some country yieldeth one fruit, and some another; some beareth one kind of grain, and some another; some breedeth one kind of cattle, and some another; so there is no ground, of what nature soever it be, whether it be hot or cold, wet or dry, hill or dale, woodland or champaigne, meadow, pasture, or arable, in a word, whether it be battle or barren, which yieldeth not matter for the bee to work upon.—BUTLER.

[For the American Bee Journal.]

## The Vexed Questions.

MR. EDITOR.—

\* \* \* \* \*

The war of words to which I refer is mostly waged over two subjects, to wit: *bee hives* and the *purity of Italian bees*—either of which is a topic worthy of being discussed with less exhibition of temper, for there are none of us so very wise in these matters as to do any more than “boast we know.” Yet, in the face of this deplorable fact, some of your correspondents talk as if they were the only qualified judges in either case of what constitutes the *true standard of perfection*, and proceed to set up their *tests and points of excellence* as if by an infallible decree. We only wish that they were as wise in these matters as they would have us think they are, for then we should have a starting point. Whereas now, with all the light these great luminaries in apiculture reflect, we are still looking and hoping for something more tangible to guide us.

“Give me a place to stand,” said Archimedes, “and I will move the world!” So give us, gentlemen, one single fact upon this question of *purity*, adapted to *all parts of the country* and good in *all kinds of weather*, and we will let you shout “eureka!” the remainder of your days. I have no learned quotations to make from the dead languages for the benefit of my punctilious friends, but I will honor them with one from a *world renowned* volume and a living author. Here it is: “Mankind has been learning for six thousand years, and yet how few have learned that their *fellow beings* are as good as themselves.” *Dr. Ayres’ Almanac*, 1868, *October page, paragraph 3*.

As this question of *purity of Italian queens* has assumed a new aspect, from the late importations and observations of Mr. Grimm, I will say, for the benefit of those who do not profess to be experts in judging of *blood*, that it is to the *hybrid progeny* of a queen that they are to look for the *safest test of purity*. For instance, if you get a queen which reproduces queens, that in turn, after copulation with a black drone, produce bees a larger proportion of which are *light colored and have three yellow bands*, you can safely conclude that the *grandmother of such hybrids* is pure enough for all practical purposes, let her *daughters* be of what color they may.

Mr. C. T. Adams, in the January number, asks if it makes any difference in raising queens from *worker eggs*, whether they are in *new or old comb*?

I will answer him that my experience is decidedly in favor of *new comb*. As I have not time to speculate upon the cause of his bees failing to raise queens, I will give him the benefit of my method, which I have *never known to fail*. I take a standard hive and place in it, on one side, a comb containing eggs and larvæ from the queen I wish to propagate from, I then take the hive with its comb to a stand having a *strong swarm*. This I open and take from it an *outside frame containing honey only* in the comb. I place this comb next to the one containing the eggs and larvæ. I then take

frames from the *centre* of the hive containing the strong swarm, and, with a wing, brush a good supply of *young bees* from the combs of the strong swarm into the nucleus hive. I then adjust the frames, and set the *nucleus* on the stand of the *strong swarm*, which I remove to a goodly distance.

In this way I have never failed to get from six to ten splendid queen cells; and in case *drone-brood* is inserted in the comb, the bees will generally build as nice *worker-comb* as if they had a fertile queen. My practice is, after the cells are *capped* to remove all but one; and when the queen hatches and *becomes fertile*, I build up the nucleus to standard strength with *brood* from other hives.

OSAGE, IOWA.

G. A. WRIGHT.

[For the American Bee Journal.]

## Size of Hives.

A QUERIST, on page 128 of the January number of the JOURNAL, doubts the size of hives being best, as given by Quinby and Langstroth. I wish he had given us his objections, if not his name; we might perhaps have learned something. Quinby and Langstroth would have been wiser, I am quite sure—provided Querist had demonstrated beyond a doubt, that his new position with regard to size, is better than theirs. Whatever his favorite size may be, I will give my reasons for accepting the size given us by the above named apiarians, as good enough at least; and also some reasons why either a larger or smaller hive may, and often does, prove a failure to some extent, in comparison with such as have up to this time been most approved.

I find that a movable comb hive containing two thousand cubic inches, contains also about seventy-two thousand worker cells, when filled with comb. These cells will contain fifty pounds of stores when filled, more or less; but, as we wish to use a portion of these cells for breeding purposes, we will subtract from the above number of cells twenty-eight thousand eight hundred, which is two-fifths of the whole number, and which keep the colony constantly populous, as from twenty to forty thousand bees are, I believe, regarded as a good swarm. This will also enable them to cast one strong swarm each year in due season, and enable them to lay up ample winter stores, and yield a surplus when the season is favorable for honey gathering. For their numbers increase very rapidly from the last of March to the middle of June, and they are found at this latter date to number more than twice forty thousand. In the time given and the number of cells allowed they will raise three crops of bees, and increase their numbers to eighty thousand four hundred. In many cases they will, at this season of the year, use a larger number of cells, at least in rearing the third crop of bees given them above, and consequently be more populous. Now, I presume all will admit that they do not die at this season of the year in numbers corresponding with the number hatched. If we admit the loss of one-fifth the whole number

bred, from the last of March to the 15th of June, we have yet bees enough left to constitute two good colonies. We will now divide the bees equally, and leave the remaining number to store the remaining three-fifths of the seventy-two thousand cells, (being forty-three thousand two hundred). This number will contain thirty pounds of honey, which is sufficient to winter the colony safely. But they will also, in districts where full forage abounds, fill with winter supplies quite a number of cells used for breeding purposes, thereby adding largely to the above amount, and which will winter the largest colony through the most protracted winter and backward spring. They will also store a large amount of surplus honey, as has often been proved, and which we of course desire them to do, as otherwise they would not be profitable to us. We also want surplus honey to be stored in receptacles fitting it for market in the very best and most saleable condition, and not in the breeding combs, as that is not of the best quality to command the largest price. Now, if Querist wishes surplus honey alone, and not an increase of colonies, then he may add from two to four frames to his hive, thereby increasing the room to be used by the queen. He will then have many bees in one hive, and if he prevents them from swarming, and will furnish them with boxes containing comb, to induce them to occupy them, his surplus will be larger than from a smaller hive. But his extra amount of surplus honey will not bring him as much profit as he would have obtained from one good swarm, and the surplus from the parent stock in the other case.

Still Querist may say that in a Langstroth or Quinby hive of 2,000 cubic inches, bees will increase from the 15th of June to the 1st of August, so that they will swarm again. Well, if they do, and my object is surplus honey and not an increase of stock, I will open the parent hive and destroy all queen cells, and turn the swarm back again. At the same time I will give them boxes partly filled or containing empty comb, which they will fill if forage abounds; and if it does not, then a large hive would be no benefit either to them or myself. Neither would the late swarm be of any value, as it would perish from want of stores. A hive smaller than the size recommended by Quinby and Langstroth will contain less bees at almost all seasons of the year; and if its combs are used in the manner I have described, they will not have the requisite amount of cells in which to rear young. If their number fall much short, there will not be at any time enough to form two good colonies; and if you take many over half their number from them for a new colony, then you weaken the parent stock too much to store a surplus of honey.

Again, with a larger hive it is always later in the season before it becomes sufficiently populous to cover all its combs. Consequently we get a later swarm from it, which is not desirable; and at the same time we get but little surplus honey.

Now, Mr. Editor, I believe I have proved that a hive as recommended by Quinby and

Langstroth, with regard to size, is at least a safe hive to keep bees in. And if Querist can give another or better reason for using a hive either smaller or larger than 2000 cubic inches, than I have given for using such dimensions, it will be necessary for him to prove that a less hive will cast one good swarm each year and yield more surplus; or that one of a larger size will become populous to overflowing with numbers and also cast an early swarm, and at the same time give a larger amount of surplus to its owner—otherwise I cannot consent to adopt his kind of hive, as regards size.

With regard to the *shape* of hives I will not at this time say more than that I am satisfied with the frame hive as made by both Quinby and Langstroth; the difference between them being but trifling. If I were to select a taller hive, I should prefer that made by Mr. J. H. Thomas, of Brooklin, Canada West. But as I am perfectly satisfied with the Langstroth hive, I shall not think of exchanging it for any other at this time. I much admire the arrangement of the bottom-board of Mr. Thomas' hive, which is so arranged as to be dropped down at the back part of the hive, and is easily returned without in the least irritating the bees. But for a large amount of room on top, to place the surplus honey receptacles, I cannot find any so well adapted as the Langstroth hive. I also succeed very well in wintering bees in the open air, when I fill the cap with corn-cobs. Its frames are very easy to handle, as it is not a very deep hive. Those of the Quinby and the Thomas hive are somewhat deeper—Thomas' being still deeper than Quinby's; yet it is not as far out of reason as some others, and may prove a very good hive, if not too expensive as regards construction. There are other hives, the shape of which I do not like at all. Neither do I like their construction, as some of them are so modified from the original frames, as hardly to be frame hives at all, being nearly unmanageable. Some others again, that have lately been presented to the public, I cannot say anything of, for or against, as I have not seen them. But some one will think I am getting on patent ground, where I should speak with great caution. So I will pass those hives for the present.

GODFREY BOHRER.

ALEXANDRIA, IND.

[For the American Bee Journal.]

### An Improved Breed!

DEAR EDITOR:—I am sometimes much amused when I read your very valuable paper, which I would not do without, indeed, if it would cost five times its price. If I can be admitted into your family of bee-keepers, I do not care whether you call me second cousin, or brother, or what, provided I can have the benefit of all the exchanging of thoughts, back and forth, done in the family. But should this come before the public, I presume our naturalists will soon see that I am a young brother in the family, young in age, and also young in writing, having never written articles to be published.

We are doing a noble work, if only our senior

brethren do not go too fast in improving the Italian queens, or that race generally. I have purchased three or four full-blooded queens of that race, and thought when I got them to have the three yellow rings, I had reached the point, having laid out seventy or eighty dollars already. I have set my wits to work, and a new plan strikes me, whereby I may keep up with the rest of you. My queens produce three-ringed workers. Now, I shall have drones with at least two of the yellow rings; and don't you see I am going to let those drones pair with the three-ringed queens next year; and don't you know that the two and three make five yellow rings on their progeny? And will I not thus be ahead of some of you? And after that I am going to add a half-blooded Egyptian drone to my stock; which will then come out five rings double-blooded Italian and half-blood Egyptian. If I am mistaken in this, I am willing to have the mistake pointed out, as I am truly

A PHILOMATH.

[For the American Bee Journal.]

### The Best Form for Hives.

In answer to "questions" by Querist, on page 128, current volume, I gave in a former number my views of the "best size" for a hive. I will now say what I consider the "best form." The length and width of a hive measured inside of the frames, should be nearly equal, which would make the box a little longer than wide. The depth of the hive should be about one-fourth more than the length. The bottom board should incline a little, to aid the bees in removing dead bees, &c. It should also be so constructed that it may be dropped at the rear of the hive, for the purpose of hiving and cleaning in the spring.

The following is the inside measurement of the box of a frame hive, which I prefer to all others; 12 inches wide, 14 inches long, 16½ inches deep in front, and 14½ inches deep at the back. This size and shape allows eight frames of the following dimensions inside, measured through the centre each way; 12½ inches by 13½ inches. The depth of the frames, of course, being 13½. Making a trifle over 2,000 inches comb capacity. I consider such a shape the nearest approach to the requirements of the bee that we can get, as it allows the bees to form themselves into a natural cluster, and one best adapted to secure the most heat in winter. Being about equally distant on all sides from the walls of the hive, no one side of the cluster is more exposed to cold than another. This form also gives sufficient depth of comb to allow the bees to store a large portion of their winter supplies at the top of the hive, where it is always warmer, and hence more readily reached in cold weather; while the distance to be travelled by the bees to reach the surplus boxes in this form of hive, is so little more than a shallow one, that the difference is of no account whatever. This form, if otherwise properly constructed, also ensures straighter and more even combs than any other, and that, too, without the use of "guide-combs" or "comb-guides." Again, I

consider this form of combs (nearly square) the most easily handled in the various operations with the bee; while the hive in its outward appearance is symmetrical, and highly ornamental to a well-arranged lawn.

I do not believe that climate should have anything to do with the size or form of a hive. I believe the size and form I have given, to be adapted to all climates; and, other things being equal, will show as good results in the production of surplus honey as any other; while, in other respects, it is, in my opinion, superior to any other form. It will be understood that with this form of hive it is desirable to use a double tier of boxes; and as the bees fill the lower tier, raise them and place the upper tier under. Bees will readily work in a second box if this plan is followed. A free entrance also should be given to the boxes, and the honey board should never be over ¼ inch thick; and only ¼ inch space between the frames and honey board should be allowed. The passage through the honey board to each box, should be from two to three inches square. With this construction the bees in the boxes are not detached from the bees in the body of the hive.

J. H. THOMAS.

BROOKLIN, ONTARIO, CANADA.

[For the American Bee Journal.]

### Give every one his due.

MR. EDITOR:—I have been noticing the movements, and dodgings, and quibblings of the different bee-hive manufacturers, and their friends. And from all that I can gather, I must think that our brother bee-keepers are on the track of improvement, because they are willing to criticise and be criticised. For while one attempts a blow of criticism, the other throws blood, thunder, and wounds, and cast-iron frame holders at him; and he takes it with a patience of a Job, at least it appears so; but I think all the more of him for that. The language of an old divine is, "in your patience possess ye your souls."

But what I wish to get at more particularly, is that the honor of inventing movable frames seems to be so grudgingly or reluctantly given to him who is entitled to it. Some would call them American, and some call them side-opening hives; while others would perhaps like to have them called thin paste board side, or hoop-bound frames, instead of coming out with due credit and honor to the man who most likely invented those frames, and did undoubtedly obtain letters patent, a re-issue, and an extension of that patent, and call them at once the Langstroth movable frame. I feel considerable more on this subject, but shall forbear for the present; for some might think thereby that I am also more partial than I should be. But I am waiting to see a tested improvement on his frame, and then I will fall in. But not sooner.

S. B. REFLOGEL.

MARTINSBURG, PA.

Send us the names of Bee-keepers, with their Post Office address.

[For the American Bee Journal.]

**Ventilating Bee-Hives.**

In the February, 1867, number of the BEE JOURNAL, is an article from me on this subject, which has been severely criticised in several papers, because contrary to the statements of authors of established authority.

In the July number, a correspondent who signs himself "*A Wolverine Bee-Keeper*," relates "*Two Mishaps*," and says that until he read my statement he had always supposed the bees were smothered, and adds: "If Mr. Adair, or any of the numerous readers of the JOURNAL, can give me any other satisfactory reason for the loss, I shall be glad to hear from them."

As soon as I received the paper containing the communication, I wrote what I considered an explanation, giving my experience in similar cases. That communication you inform me was never received.

Mr. Wm. Bruckisch, of Hortontown, Texas, in an article published in Patent Office Report, 1860, page 170, from which I quoted in my first article, says: "*Another remarkable feature deserves mention. Bees are capable of living for days, and weeks, and even months, without air—at least without the occasion of fresh air.*"

\* \* \* \* \* This fact being of great importance on account of the less quantity of food required during winter, (not, however, because of its total stoppage, as supposed by many), the writer made repeated experiments on the subject." His experiments are given in my former article.

"*A Wolverine Bee-keeper*," from his own statement, shows plainly that he did not smother his bees. He says "I closed the entrance, raised the hive a trifle, holes in the top of the hive open, honey boxes removed, cap covering the boxes on the hive." They were all dead in an hour and-a-half. In the other instance there was "a hole in the top of the box two inches square, covered with wire-cloth. In a half day two-thirds of them were dead. Now, it is plain that in both these "mishaps" the bees had plenty of air, more, in fact, than is frequently allowed bees that prosper.

The mishaps were not occasioned by want of air. I have had several "mishaps" of the same kind, which would make this letter too long to relate. But in every instance it happened when "*I raised the hive a trifle*" or attempted to leave some opening to admit air, but never when I closed the hive tight. I could not account for it for some time, why the bees would die when air holes were left open, and why not when all was closed tight, until last spring.

I had a natural swarm which I had just put in a hive, when another swarm issued and was about to go in with them, and I had to close the entrance to prevent it. After hiving the second swarm I returned to the first and they were nearly half of them dead. On looking for the cause I found that the glass which formed the back of the hive did not fit, but left a space of about one-eighth of an inch along its top, and the bees were trying to get out at the opening. I noticed further, that the bees were in a general

row or fight, and that in contending for which should have precedence at the supposed exit hole, they would sting each other and fall to the bottom. When they became angry they had first to discharge the honey from their sacs before they could use their stings, which was continually falling on the bees piled below, besmearing them until they were black, and several table spoonsfull had leaked out of the hive on a board under it.

I puffed some smoke through the opening until the inside was a perfect fog, and closed up the opening with some paper, and quieted them; thus saving the remaining bees. I repeated it in another similar instance with the same result.

I transferred a colony, comb, honey, brood and bees to a section hive, and placed them on their stand with two entrance holes open three inches long by one-half inch wide. The glass in the back fitted badly, and left a similar opening. Next day I opened the door and found that a pint or more of bees had died and fallen in a pile below the opening, and the contention was still going on. I closed the gap and that prevented another "mishap."

In the last instance the regular entrance holes were open and most of the bees were passing out and in, with no confusion.

Three or four years ago I hived a swarm of bees in a tight hive. The next day they attempted to swarm out. When about half had passed out, I stopped the hole with a tight-fitting plug. The queen still being in the hive, the bees that were out returned and clustered over the hole. About dusk I opened the hole and they went in. The next day and the next, they repeated the attempt. In each instance I closed them up tight. On the fourth day they went to work and prospered. Not a bee met with a "mishap," except a few that I crushed in stopping the holes.

During the last season I often prevented swarms from issuing, by stopping the entrance holes, and keeping them closed until late in the evening, and repeating it the next day. In this time, the young queen was disposed of and the swarming fever passed over. In two instances I discovered the swarms coming out, and closed the holes. I kept them confined during that and the next day. In none of these instances did I "smother" a swarm nor any part of one. When I wish to prevent a colony from swarming, I find this a far simpler and easier plan than any laid down in the books.

Another experiment and I am through with instances. I took from a hive a honey box, fourteen inches long, by seven inches wide and five inches deep. It was filled with honey and bees. Every crack and crevice was made airtight by the bees, except the passage hole; that I closed by covering it with a piece of waxed paper, such as is used in grafting. It was thus rendered airtight. I set it on a smooth board in the shade of a tree, on top of the hive. One end was glass, which admitted light, but not air. *I let it remain there two days.* I then removed it about one hundred yards and opened the hole, supposing the bees would fly out and return to their home. Not a bee left. I supposed they had brood, but on opening the section

of which the box was composed, (it was a "section honey box" by means of which each piece of comb could be separated from the others) and examining I found all the comb filled with honey and no brood. I then concluded that they had been separated so long from the parent hive that they had forgotten it. I took about a handful and placed them at the entrance of their hive and the guard bees refused to admit them, and they showed but little inclination to enter, but took wing and flew off. I hived them in a new hive, giving them two sheets of comb and brood from the old hive. They went to work and are now a prosperous colony. Could there be a severer test of whether bees can be smothered, or whether they can live "without air, or at least an accession of fresh air?"

I deem it unnecessary to prolong this letter, by commenting further on these facts. They are conclusive to me. The Solomons to whom we have looked for all of our bee knowledge I know have taught the reverse of this. But these are stubborn facts, and if Mr. D. C. Hunt, who says of my former article, "that the ignorant are wise in their own conceit," and uses other rough language, (see BEE JOURNAL, March, 1867, p. 172), will think and experiment a little for himself, and not set everything down as "fixed facts" that he has been taught by others, who are as "wise in their own conceit" as he seems to be, he may find that his aphorism "like chickens" and some other things, may "come home to roost."

The truth is that there are yet many things to be learned about bees, and that the economy of the bee-hive is not yet understood. We will have to learn several things yet before we attain perfection.

I have now written more than I intended, but will venture to theorise a little about this thing. If you think proper you can reserve the remainder of my letter for another number.

D. L. ADAIR.

HAWESVILLE, KY., JAN., 1868.

[For the American Bee Journal.]

### An Inquiry by a Novice.

*First.*—Will some one of large experience give us the best way of raising early queens, before the appearance of black drones, so as to make early artificial swarms, and have fertile queens in readiness for them? But, especially how to get a supply of bees, to form nuclei as early as April or the first of May, without weakening the stocks from which the bees are taken. This I consider the secret of success; but have never been able to raise queens before swarming time and therefore too late for artificial swarms. I have tried Langstroth's plan of setting one hive on another, but could never get the bees to go up till June.

*Second.*—Will bees, returning from the field and finding the old stock removed, accept of a young queen in a new hive, on the old stand; with a frame or two of eggs and brood? I have never tried this, and do not want to risk the experiment.

ANOTHER NOVICE.

[For the American Bee Journal.]

### Criticism.

Fair, honest, open criticism is solicited. Free discussion will bring to light many facts that a few are interested in keeping concealed. Mr. E. Gallup on page 80 of the Bee Journal, vol 3, speaking of the waste of wax, in constructing comb, says:—"If you have the bees in the right kind of hive, and ventilation just right, they will not waste one particle."

I have a suspicion that Mr. Gallup does not know what kind of a hive, nor what ventilation, is right. If he does let him tell us, even though he is no "scholar." Every experienced bee-keeper knows that his "division-board" would be a failure as far as saving all the wax is concerned.

In regard to the "two-story bee-house," is it not rather strong language, for the sake of finding fault, to say—"the upper story is good for nothing," when perhaps he could only say in truth that the upper story was not quite as good as the lower.

Have a care, Mr. Gallup, for my feelings. How did you know but this was my *pet feature*?

I happened to say casually in my work on bees, that some hives do well, and others standing by them will yield no profit. He remarks—"I must confess that I was greatly disappointed in reading his late work. I expected that it would be fully up to the times. Why did he not tell us how to remedy this, and make all swarms equally prosperous?"

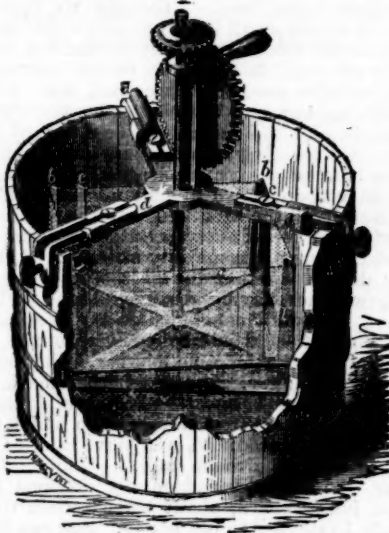
I will frankly confess that I am not able to tell "how to make all swarms equally prosperous," and submit to the humiliation of being *behind the times*. But I have a desire to catch up—am "ambitious to rise." Mr. G. has insinuated that anybody up to the times, *might tell*. Now, I insist he shall say where we can get the desired intelligence. I expect to make from some of my best colonies next season \$30, \$40, perhaps \$50. If all that I have would be equally prosperous, I should have quite a snug sum. Now, I would give one-half of this to Mr. Gallup, if he will furnish the information to accomplish it. Let it come through the Journal, thus making it the "best source of information on the question;" and when the last is printed, the whole subject of bee-keeping is finished—we have it all.

M. QUINBY.

ST. JOHNSVILLE, N. Y:

*To ascertain the parent stock of a swarm*:—It sometimes happens that a swarm issues unobserved and is found already clustered, so that it not known from which hive it came, when there are a number of strong colonies in an apiary. To trace its parentage, detach twenty or thirty bees from the cluster, dropping them into a tumbler or a small box; carry them in front of the apiary, and throw them up in the air by a whirling motion of the arm. Most of them will immediately repair to the parent hive, lighting near the entrance, and standing there fanning briskly, before rejoining the general mass, thus indicating their native home.—*Berlepeck*.

[For the American Bee Journal.]

**Honey-Emptying Machine.**

We, last year, made the following announcement in our circulars:

"A plan has been devised in Germany for emptying honey from the comb, without injuring the comb, or removing the bee-bread or any other impurities. By returning the emptied comb to the bees, the yield of honey, in favorable seasons, may be largely increased. An improvement on the German machine for effecting this object, has been devised and patented by L. L. Langstroth and Samuel Wagner, which will soon be thoroughly tested, so that the machine can be offered for sale the coming season."

Owing to constant demands on our time in other directions, the first machine was not ready for use, until the middle of June. We had sent to purchasers about the first of May, a large number of queens reared the previous season, and as the yield of honey from the fruit-trees and the locust blossoms had been very abundant, the combs, in many of the hives, were so filled with honey that the young queens had very few cells in which to deposit their eggs. In this state of affairs the machine was at once called into play; four, and even six, of the heaviest combs were taken out, the uncapped cells emptied, and the combs returned.

During the course of this work, we found that sealed brood in the combs was *uninjured* by the process of emptying, that the eggs in the cells were *undisturbed*, and that pollen, freshly deposited, remained in place; but that all the honey uncapped, and all the young *larvæ* in the cells uncapped, made haste to quit the comb when once the machine commenced to work.

An apian friend, whose articles have often added interest to the columns of the *Journal*, being soon after on a visit to our apiary, saw the machine and devised a plan for making it lighter, simpler, and cheaper, and at the same time equally adapted to most of the ends sought

to be attained. Our original machine, of which a cut is annexed, which will serve to give an idea of the principle on which we work, (viz: centrifugal force), had two ends in view: one to allow of the reception of comb frames of different sizes, the other, to allow of the use of different sized barrels or receptacles. To accomplish these ends, it had been made of iron, with numerous bolts, pillars, screws, &c. In the modified machine, the patented features are dispensed with, a barrel being furnished with each apparatus, and the comb-holder of wood, being made large enough to hold the Langstroth frames used in hives not over ten inches deep. Smaller frames, or *pieces of broken comb*, can as readily be emptied.

This modified style we have thoroughly tested, and found to work to our satisfaction. With it, two full combs, in our frames, can be emptied dry and clean, in less than three minutes after the cells are uncapped. This uncapping was at first a very difficult process, until we had a knife made expressly for the work; this knife needs to be frequently dipped in boiling water, to prevent clogging of the edge.

After a little practice nearly every cell can be readily uncapped by this knife, without materially injuring the comb, which can at once be returned to the bees.

Having already made this communication longer than was intended, we will only add that since the first day of December, we have emptied successfully all our full combs secured as surplus, and that the honey obtained from these combs, many of them black from long breeding in, and more or less stored with bee-bread, was of good color, and possessed the peculiar, delicate flavor which would have been destroyed if the comb had been subjected to either heat or pressure. We have found no difficulty in selling this honey at wholesale, put up in "glass screw-top fruit cans," side by side with the finest box honey, for only a few cents less per pound. For table use, in all except the mere show made by white comb, it is far preferable to honey in the comb.

As we are continually in receipt of letters of inquiry in regard to this apparatus, price of machine, directions for making, &c., allow us to add that we have made arrangements for the supply of such machines as may be ordered, including knife and barrel, at an advance over cost barely sufficient to pay for our time in attending to the matter.

Any one is, of course, free to make them. For further particulars, we refer to our Circular and Price-list for 1868.

L. L. LANGSTROTH & SON.  
OXFORD, BUTLER CO., O., Feb. 1868.

If worker bees are to perform any service of much account in the year in which they are bred, they must be hatched at latest on the 15th of June, in districts where there is no fall pasturage.—*Berlepsch*.

A northern man, who recently emigrated to Jefferson county, in the lower valley of Virginia, made 1,500 pounds of honey from fifty hives of bees last summer, which he sold for \$450.

[For the American Bee Journal.]

**Experience in Italianizing.—No. 2.**

MR. EDITOR:—In five days after I had found the queen—or the second one—for I am convinced that I found two, an old bee-keeper called to see my bees. He had just ordered two queens from Mr. Langstroth. I related to him the circumstances in reference to finding the queen, and expressed my fears that, as the Italian queen to be introduced had been kept in the box since July 24th, seventeen or eighteen days, she could not hold out four or five days longer, until I could introduce her. On examining the box, he agreed with me, saying he hardly believed she was still alive. I asked him if he thought I could safely introduce her now, it being five days since I removed the black queen. He said we would open the box and see if she was yet alive, and if she was, we had better risk it, than risk keeping her any longer. On opening the box there were hardly twenty bees alive. But her majesty was still living, though very weak. We knew of no way to keep her a few days longer, and I determined to risk introducing her then. So we caged her with eight bees; cut out all the cells we could find; put the cage on top of frames where the bees were thickest; leaving off honey-board, and spreading an oil cloth over, as I always do since. When I went to uncage her in twenty-four hours, she with every bee was dead. Thus I realized the failure I had expected to be the result of this *bothering* case.

Being determined not to give up, or *grieve* over spilt milk, I determined to let them remain queenless until they would be glad to accept any queen I should see fit to offer them; went to my desk and ordered two more queens to be shipped forthwith. I would have sent to Mr. Langstroth this time, as it was much the nearest point, but I knew from the gentleman above referred to, that Mr. Langstroth could not furnish them for several weeks. Mr. Quinby filled the order promptly; but the bees were eleven or twelve days on the road, though they finally arrived all right. By the way, I examined the hive again in five days from the time the queen was killed, and found four more sealed cells, which I removed. This was the cause of the killing of the queen. We had either overlooked them, or they were built over larvæ five days old from the egg.

Nine days previously I had removed a queen from another hive, to receive the second of the two queens ordered. This case hardly took me an hour, with no assistance. I introduced those two queens safely, but made a very ludicrous blunder in the first instance, that came near ending in the loss of the queen. This was as follows: The bees that came with the first two queens were common black bees; and I expected of course those coming with the second two would be of the same kind. But on opening the box before the window, the first bee that came out took position on the top of the box, with wings vibrating, abdomen extended, and yellow bands glittering in the sun. Not expecting to see a such bee, I immediately seized her, supposing her to be the queen, dip-

ped her in a spoon of honey, and introduced her. While going to the hive with her in my hands, she curved her body and made vigorous efforts to get loose. I thought Mr. Quinby had sent a very small but stout queen this time. The greatest wonder was that she did not sting me, *as she ought to have done*, for she proved to be a veritable *worker*, as we shall see. After introducing her, and believing all was right, I returned to let the remaining bees out of the room. On entering I found the window full of yellow-banded *queens*, precisely like the one I had just introduced. I saw my mistake instantly. Nearly all the bees had left the box, and collected on the window. But on looking in the box, I saw her majesty at once. I had many doubts whether the bees would accept her now, after having deceived them with a worker, but finally concluded to try by experiment whether she would be received or not. I introduced her in the same manner, by besmearing her with honey. I would here remark, in passing, that for besmearing a queen, I use a little honey taken from the hive to which the queen is to be introduced, and have thus never failed to introduce them safely. While introducing this queen, I accidentally dropped her on the honey-board, about three inches from the hole I intended to put her in. She ran into it with the swiftness of a cockroach. Novices should guard against such accidents; and those who read this will be in no danger, probably, of incurring such risks. After being satisfied that I had introduced these two queens successfully, I resolved to give the bees no cause for excitement, lest the newly installed sovereigns be yet killed, during a temporary ebullition of passion. I believe bees can be provoked to destroy their queen, and hence I never opened either of the hives to see if all was right, till I saw the young Italians come out to play, in thirty-four days after. At present I would not fear opening a hive half a dozen times, if necessary, the week after I introduced a queen. But my rule is never unnecessarily to disturb a colony—though, at that time, I had other reasons for being so careful of the queens. I was very anxious to raise queens and Italianize all my other colonies, the ensuing season, from those two queens. I then had seven other stocks, besides those two—having had six in the spring, with but two swarms that season, besides one from the woods, making nine in all. These I wished to Italianize before they increased.

Having been very successful in wintering bees, I intended my next number for that subject, but as the season for raising queens and Italianizing is approaching, I shall devote it to those topics; so that those who prefer my process as being easier, may have an early opportunity to try it.

It would be a good plan for others of large experience, to write on the same subject for the May number of the BEE JOURNAL, so that we may have a greater variety of plans and suggestions than has yet been submitted to it readers. If Mr. Langstroth could finish his handbook, giving various practical manipulations and useful processes in detail, the book would find a rapid sale, and be just the thing needed.

LOWELL, Ky.

A

[For the American Bee Journal.]

### Objections to frames being placed at equal distances from each other in movable Comb Hives, considered.

MR. EDITOR:—In the Bee Journal, vol. 5, page 58, it is stated that "adjusting the frames firmly at equal distances from each other, is a decidedly objectionable plan, and certainly a retrograde movement in bee culture. It was used, fully tested, and abandoned years ago."

I cannot possibly concur with the above, and though Langstroth says; "you will soon get tired of frames in notches," yet such has not been my experience. It appears from the above that, long ago, it was thought desirable that frames should be fixed at equal distances from each other. Is it not just as desirable now? But it is said that "it was fully tested and abandoned years ago." But is not this an age of improvement? May not hives differently constructed from those in use years ago, admit of the frames being laterally a fixture? We will consider the two principal objections to this plan. First, it is claimed that frames so fixed will not admit of lateral movement; hence they cannot be pushed together for the purpose of removing any desired frame. Second, it is claimed that, on account of the irregular shape or uneven sides of combs, they cannot conveniently be exchanged where frames are fixtures, as one comb would crowd upon another. Now, Mr. Editor, I claim that these objections arise from the use of hives which are not properly constructed. In other words, in properly constructed hives, the frames may be fixed, and still admit of a lateral movement, and being exchanged, when filled with comb, without difficulty. Now, if hives can be so constructed, and in their construction lose none of the advantages now given by the best frame hives, would they be objectionable—a retrograde movement in bee culture? I think not. In 1864, I invented and patented a hive, the frames of which are fixed at equal distances from each other, and yet they admit of both a lateral and a vertical movement, with far less difficulty than any other hive with which I am acquainted (and that is not a few). And the annoyance to bees is so much less than with the Langstroth and other hives, that some who have adopted the hive, have written me that they were no longer troubled with stings when operating with their bees. That is almost as good as Flanders' "bee charm." Neither do I find any difficulty in exchanging cards of comb—often doing so every day in the week, if I think it is required. I practice artificial swarming; strengthen weak stocks, by exchanging cards of comb with stronger ones; build up stocks for shipping; in fact exchange the combs in any way that they may be exchanged in the Langstroth or any other hive; doing so for the last four years, and instead of being tired of "frames in notches," I would not have them otherwise on any account. But it must be understood that combs made in my hive, will, as a whole, be far less crooked and waving than

when made in hives that are long from front to rear. This is easily explained. The shorter the top piece of the comb frame, the more even and straight will be the comb, as the bees always commence to build at less points on a short top piece than on a long one. I have known bees to commence at four different points to build on a frame in a Langstroth and other hives that are long from front to rear; whereas on a frame that the top piece is only about twelve or thirteen inches long, they will seldom commence at over two points, and frequently at only one; and hence the bees are more likely to build straight. I would not however speak disparagingly of a Langstroth hive, as I consider it better than at least two-thirds of the modern patent frame hives. Yet it will not admit of frames being fixed, neither will it secure as straight combs as a hive shorter from front to rear, unless elevated, which amounts to the same thing as shortening the frames. I use a top piece made like the letter V. I never use guide-combs, could not be bothered with them; and the combs are so straight and even that practically there is no difficulty in exchanging them, though the frames are firmly adjusted at equal distances from each other. Furthermore I pledge myself to examine the bees in three of my hives, removing any comb, and with less annoyance to the bees, in the same length of time that it will take to examine, in a similar manner, two hives of any other construction.

J. H. THOMAS.

BROOKLIN, ONTARIO.

[For the American Bee Journal.]

### Explanation.

EDITOR BEE JOURNAL:—I perceive that I am called upon for explanation, or reconciliation of things said in my book and circular.

A. B. K., on page 137, BEE JOURNAL, vol. 3, calls for more light, &c.

On page 311 of Bee-keeping Explained, I spoke of "Early Red or June Clover," as frequented by the Italians or hybrids, during the first few months of my acquaintance with them. In my circular of 1867, in enumerating their good qualities, as stated by others, I said—"Will work on second or seed crop of red clover, when other sources of honey are not abundant." I then remarked—"I have no opportunity to see them work on red clover, so little is raised in this vicinity." Here is where I am at fault, in omitting to use again, in the last paragraph, the words "second or seed crop." Had not my attention been called to this subject, I would not have noticed that the words were not there. I see in the circular of the year previous, it reads: "I have no opportunity to see them work on red clover, so little seed clover is raised in this vicinity."

There are many varieties of red clover, differing materially in the secretion of honey. Some secrete honey at one time, and not at another. If Mr. K. will observe closely, he will find even white clover varying from a plentiful yield to none at all.

M. QUINBY.

ST. JOHN'SVILLE, N. Y.

[For the American Bee Journal.]

**Wintering Bees in Cellars.**

MR. EDITOR:—In a former communication I stated that I had united such of my colonies as I thought were too weak to winter well, and removed them to the cellar, leaving only two holes in the honey-board open for ventilation, and asking some of the readers of the Journal for information whether this was sufficient. A few days after sending off my letter, I examined my bees, and found them all astir, trying to get out at the entrance and the holes in the top. As the weather was too cold to remove them to their summer stands and let them fly, I used a little smoke to drive them down below, and made five more holes in the honey-board, covering them with wire cloth, to keep the bees in and *mice* out. In a short time they became quiet, and have remained so ever since, showing clearly that they had not sufficient ventilation at first.

I found a large number of dead bees on the bottom boards of these hives, some of which I suppose had worried themselves to death in trying to get out. But I think it probable that the larger part of them died of old age, as there was but little brood found in any of my colonies after the 20th of September. And I am satisfied now that it is of little use to build up strong colonies with *old bees* in the fall, expecting them to come out strong in the spring, either in numbers or physical strength. These old bees may live through the winter in a hive of proper construction, and in an atmosphere of even temperature, but they will soon die off when the busy labors of the spring commence, and before a sufficient number of young bees are reared to take their place. The only remedy I can suggest is, to tempt the bees to continue breeding as late in the fall as possible, by feeding regularly a small quantity of honey or syrup every few days, provided there is no forage for them in the fields.

Permit me, through the Journal, to return my thanks to Messrs. E. Gallup, T. F. Bingham, Thomas L. Sydenstricker, and A. Grimm, for their kindness in answering my inquiries (by letter) in regard to ventilation, temperature, and water for bees.

Mr. E. Gallup, in his letter, gives some experiments in *ventilating* and *watering*, that I think will be of interest to the readers of the Journal, and as Mr. G. has given me permission to do so, I send you his letter for publication. Will Mr. Grimm give us, through the Journal, his manner of packing bees in his cellars? In one of these he is wintering three hundred and ninety-three swarms, all of which were doing finely at the time of writing, (January 13). He also states that he is wintering some forty swarms underground, all in one pile, and covered with about twelve inches of straw and eight or ten inches of earth; but does not like the plan as well as wintering in the cellar.

J. R. GARDNER.

CHRISTIANSBURG, W. VA.

Dr. Dönhoff regards the antennæ as the olfactory organs of the honey bee.

**Mr. E. Gallup's Letter on Ventilation and Watering.**

MR. GARDNER:—I will endeavor to answer your enquiries in the January number of the Bee Journal, and as you may need the information before you get the next Journal, I proceed to give it to you immediately.

Your first enquiry is about feeding entirely on molasses in winter. It is poor feed for the inexperienced. You can feed on almost any kind of sweet in spring or summer, when the bees can fly out. If you have no honey, use white sugar dissolved in boiling water and of the consistence of honey, for winter.

How are you to know whether your bees have ventilation enough? I answer, by the action of the bees. I have one small swarm that I have closed the entrance, and have two holes in the top about the size of yours. Then I have two extra large swarms, from which I removed all the top, honey-board and all, and then had to raise the hive three-quarters of an inch from the bottom board on one side, before they had sufficient ventilation. (I do not use anything to stop them in.) Your bees must not show any agitation, but be perfectly quiet. On listening near the hive you can hear a gentle humming, if all is right. Do not fasten them in, but use your own judgment, governed by the action of the bees. A small swarm must not have a current of air through the hive; neither must they have too much air from any source. A large swarm must be ventilated accordingly. Any medium swarms have the common entrance, three inches by half an inch; and a five-eighths inch hole directly above, three inches from the top, and two holes in the honey-board towards the outside, about one inch by three, all open, varied a little to suit the swarm.

The temperature of your cellar ranges exactly like mine.

Do bees want water, &c.? Last winter was the first time that I ever tried water for bees. I found that as soon as they commenced breeding (which a strong swarm will do about the first of February,) every time I went into the cellar with a light, some few of the bees would come out of their hives. I then began giving them a little fresh water every third evening, in a small piece of comb laid close to the top ventilation, and they kept quiet. But on stopping the supply of water, they became uneasy again. I kept up the supply and had no further trouble. Your climate must be warmer than ours, hence the bees would probably commence breeding earlier. You can also set them out earlier in the spring.

Do not set your hives directly on the bottom of the cellar, but have a bench or something two or three feet from the bottom, as the air is dryer.

A letter of enquiry, with stamp to pay postage for reply, will be cheerfully answered at any time. My experience cost me considerable, and I am willing to impart it to all sincere enquiries.

Yours, &amp;c.,

E. GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

**How I became an Apiculturist.—No. 2.**

The city of Langres, (Ligones, of old), situated on a high rock in the form of a promontary, is naturally so strong a position that the Roman emperors, when Gaul was subject to their sway, fortified it, placed it in charge of one of their prætors, and constructed a system of paved roads radiating from it. These communications, several of which still exist, greatly enlarged its transit trade, which continued to flourish, till railroads were introduced, and refused to scale the heights on which the city is located. When I was twenty years old, its annual fair, held in August and continuing eight days, attracted merchants from all parts of France, and buyers from the whole neighborhood around. I was then a clerk in one of its wholesale dry goods stores. That year, the municipal administration, according to custom, in order to give more splendor to the occasion, arranged for Sunday, various games and amusements, to be followed in the evening with a general illumination and splendid fireworks. The scene of these sports was between the cascade and the public or white fountain, on the grand promenade. An electrophore was erected to light at night this favorite resort, which is a walk two miles in length leading to the fountain, and planted with hundreds of linden trees.

It was in the afternoon, when, as with some comrades, I was following to the shooting ground the National guard and a company of firemen, preceded by a brass band, I observed a group of boys throwing sticks at a hollow tree near the walk. Approaching, I discovered that they were trying to smoke out a swarm of bees dwelling in a big linden. Fully persuaded that the tree guarded by the policemen, would prove a sufficient protection for the bees, and believing them to be out of reach of the boys, I passed on. But on my return in the evening, to my great astonishment, several boys were contending for the spoils of the ruined colony. With their knives they had cut away the rotten wood below the swarm; but the numerous stings they had received in their faces, showed that the bees had bravely defended their stores, and the victory had been warmly disputed. As for the bees, they were hanging in a cluster under the first branch.

The distress of that swarm, thus devoted to certain death, revived all my predilection for bees, and I felt an irresistible desire to save them, if possible. With all the eagerness natural to a young Frenchman, I came back to the city and supped hastily. Then, provided with nails, hammer, wire, and thread, and carrying a store-ladder, I went to a shop where I had seen straw hives for sale, and procured one. When I re-entered the promenade, the citizens were already gathered in groups, admiring the light of the electrophore, playing beneath the green vault formed by the lindens, while every leaf was successively tinged with all the colors of the rainbow. Too much pre-occupied and overloaded to think of stopping, I hastily left the main avenue, (where everybody appeared to be annoyed

or incommoded by either my hive or my ladder), and turned into a lateral alley, where the coveted swarm was. My ladder being a little too short, I had to exert my gymnastic skill to the utmost, in order to secure the hive properly above the clustered bees. The wavering light of the electrophore by turns helped and hindered me; for when it flared up the bees would become excited, leaving the cluster and assaulting my stove-pipe black hat. It was then that I first noticed that bees have an antipathy to the black color, for while my hat was the target at which they aimed their thrusts, I received only a single sting on my hand. After introducing some few bees in the hive, I had the gratification to see the whole colony follow and enter in an orderly manner. I then came down, concealed my ladder, returned home and retired to bed, to meditate on what remained to be done.

To get possession of the bees was not very difficult; but to decide where to place the hive after the swarm was in it, was a much more perplexing matter. The rocks that girdle the city having limited its extension, gardens are rare within its area, the yards are small, and the streets themselves narrow. Hence it was impossible to think of setting the hive in a garden. My grandfather owned an orchard near the suburbs, but as that spot was not enclosed, the hive if placed there, might be upset by cattle or pillaged by vagrant boys. The roof of the storehouse where I was clerk, though covered with tiles, had one of its slopes leveled in terrace, and that part was covered with zinc; and I selected this as a suitable spot.

As it was necessary to bring in the swarm before daybreak, I remained awake the rest of the night. Before four o'clock next morning I was knocking at the shutters of his lodge, to arouse the keeper of the city gate, which is kept locked from ten at night till five in the morning. Whether the man was really asleep, or whether he merely feigned to be deaf, I know not; but could obtain no answer. In vain did I offer him the customary fee of two cents; in vain did I, with huge generosity, proceed to increase the proffered perquisite to ten cents! No response could be elicited! Finally, despairing to see him before the established hour, it occurred to me that there was a breach in the wall near the college, through which the schoolboys used to scale the ramparts. I ran thither, and finding the place with the pegs which had been driven in the fissures still remaining, and descending by their aid, I went directly to my swarm. The bees were all peacefully in the hive. Fastening my handkerchief under it with pins, and passing some twine around it for greater security, I took it up and triumphantly re-entered the city. After installing the hive on the zinc-covered platform, I unfastened the handkerchief, and came down to attend to the customers of the store.

Immediately after breakfast, I went up again to see how my bees were getting on. They were as regularly busy as though they had been located there a long time. But, under the burning rays of the sun, the zinc was already getting hot, though it was yet far from noon. Fearing that the heat of the zinc would compel the bees

to decamp, I looked about for something to afford them shelter. In similar circumstances, we might, in this country, use the side or top of a common packing box; but not so in France, for there dry goods are usually baled up in coarse bagging. Unfortunately customers were waiting, and I had nothing suitable for the purpose. Yet there was no time to lose. I chanced to espy the cover of a large and deep cistern, which was always kept full, though used only in lye-time. In France, linen being abundant, families generally wash their clothes in lye, only two or three times a year.—To save room the cistern had no stone curbing, and hence I hesitated to let it remain uncovered; but reflecting that there were no children there, and deeming it highly improbable that anybody would be drowned at night in a corner of the yard where no one had anything to do, I resolved to carry the cover to my bees, determined to take it back again as soon as possible.

The apprehensions, which during the day frequently recurred to my mind, disturbed me in my sleep next night. I dreamed that somebody had fallen in the cistern. I heard his groans, intermingled with the rippling of the water. At last fear and pain became so poignant that I awoke. The splashing of the water still continued. I doubted whether I was quite awake. I sat up on my bed in order to recollect myself. Then the noise ceased, and I imagined that I had the nightmare. Again the rippling was renewed for some seconds, ending in a cry or rather sob choked in the throat by the suffocating water. Doubt was no longer possible—in my imprudence I had caused the death of some one; and frantically I imagined the miserable condition of the wretched creature whom the water had swallowed up. With lightning speed a thousand thoughts flitted through my brain, and set the hair on my head on end. I rushed undressed out of my room, ran shrieking, and knocked at every bedroom door. My messmates, believing the house on fire, were soon gathered at the scene—not one was missing. Our old servant, Francois, came first to the rescue. We lowered his lantern in the cistern, and saw a big white cat floating in the water! She was in the habit of descending by the waterpipe from the high wall enclosing the yard; and not suspecting on this occasion that the cover had been removed, took her accustomed leap, and landed in the water. Her fall and death-struggle had caused all my terror. The reader will readily imagine that the cistern remained uncovered no longer.

HAMILTON, ILL.

CHAS. DADANT.

[For the American Bee Journal.]

The French socialist, C. Fourier, whose genius comprehended at once the greatest schemes as well as the smallest ameliorations, besought the nations, some sixty years ago, to organize industrial armies for the purpose of piercing the Isthmus of Suez and of Panama. In the same work he reproached naturalists for occupying themselves principally with dry nomenclatures, and subordinating thereto the interests of practical science. In support of his position he quoted their inability to find, either

a kind of bees with a proboscis or tongue long enough to gather honey from the blossoms of red clover—thus allowing it to evaporate daily; or to discover a species of red clover with so short a corolla as to permit the bees to reach the honey within.

The accounts so discrepant published in the BEE JOURNAL, respecting the red clover and Italian bees, led me to remember the work referred to above, and to think that the contrariety of statement on so plain a subject may be caused by an accidental difference in the length of that flower's corolla. This difference may result either from differences in soil or season, or may be the effect of some specific variation become fixed in the very flower. This matter can be elucidated by the bee-keepers, whose bees are seen gathering freely on the red clover. For this purpose let them carefully gather some seeds, when ripened, from clover blossoms on which the bees were seen to be busily foraging; and send those seeds to be sown in localities where bees were never seen gathering honey from such flowers. If the shortness of the corolla be thus ascertained to have become a permanent characteristic, (and we daily witness greater changes in cultivated plants), it would be easy for the community of bee-keepers spread throughout the United States, and who are for the most part agriculturists also, to substitute everywhere the short corolla clover for the long, and thus introduce in the country a new and valuable source of sweet income.

HAMILTON, ILL.

CHAS. DADANT.

[For the American Bee Journal.]

### Change of Progeny.

Last year, as well as this year, I had several bastard Italian stocks of honey bees, whose queens gave birth to a predominant Italian progeny, in their earlier period of life; but in the second summer of their existence, their progeny was almost exclusively pure black bees. A similar change was noticed by Dzierzon, and Berlepsch (BEE JOURNAL, Volume 1, page 18). Can any bee-keeper explain this? If the sperm of the drone is preserved in the *receptaculum seminis* of the queen, and absorbed gradually during oviposition, should we not expect that the progeny of a queen fecundated by a common drone, would be all alike during her lifetime; and if any change was probable, should we not rather expect that the Italian blood would predominate in the progeny of a bastardized Italian queen, during the latter part of her life, rather than the contrary? Has any naturalist ever ascertained, by means of the microscope, whether one-fourth, or one-half, or three-fourths of the contents of a regular fertile queen's spermatheca, was used up in the course of one or two years? A. GRIMM.

JEFFERSON, WIS.

The experience of later times has taught that bees are best preserved in winter, by a general restraint from the open air; that they may pass the time of no gain in sleep and slumber, with little waste.—BUTLER.

[For the American Bee Journal.]

**Mouldy Combs.**

As much has been said in different works, and by different correspondents, in regard to the utility of carefully removing old or mouldy combs, an experiment of mine may be found interesting.

About a year ago I examined the combs of a stock that had perished for want of proper ventilation, &c., and found them quite mouldy. Nearly every frame contained some honey, and many of them were full of dead bees. Finding it a hopeless task to pull the bees out separately, I carried the hive in doors, to be out of the way of robbers, and there it staid until June, when the bees were at work on clover.

After I had used all my frames of good combs, I opened this hive to see whether the combs had dried off and improved in condition. I found the honey had been so damp that what was in open cells had become sour; and the smell was so bad from the dead bees that I was tempted to melt all into wax; but taking some of the best I concluded I would try them. These the bees cleaned out, and filled with honey so rapidly, that I gave them some more. Finally, after airing them one forenoon, I took the two worst frames, which were full of dead bees and so mouldy that they were for the most part covered with a downy substance and smelled quite badly, and put them in the centre of one of my strongest Italian stocks. I must confess that I afterwards thought of taking them out again, for fear that the bees might desert the hive, so disagreeable was the smell; but, on further thought, concluded to wait until evening.

When I returned home I was, at a loss to account for the number of dead bees about the entrance of the hive in which those frames were inserted, until I saw that they were the self-same mouldy bees removed from the bad combs. And on lifting out the said frames, I was agreeably surprised to find them nearly filled with clear sweet honey, and the cells so lengthened out with clean white wax that I could not believe it possible they were the same, till I had examined all the others repeatedly.

It may be suggested that the bees could have built new combs nearly as quick as to cleanse the old; but from other experiments made at the same time, I am sure they could not have done so, by considerable odds. I have since used many frames of combs full of dead bees, but these were removed so readily, that I should never have known the difference.

Perhaps all bees are not as energetic as my hybrid Italians; but a frame of comb will have to be very bad indeed after this, before it is condemned.

NOVICE.

P. S.—Who is going to furnish us with artificial comb, or even the foundations, made of cloth or paper soaked in wax, as a correspondent suggested? I tried it last year sufficiently to convince me that the bees *would* use such ma-

terial; but from my imperfect stamps, I could not prepare it satisfactorily.

One objection to the comb-emptying machine would be that folks around here will not buy strained honey, or if they do, it will not bring near as high a price as honey in clear white combs. Again, how will you prevent it from candying?

Who can furnish foundations for combs, or has the necessary dies for stamping them?

[For the American Bee Journal.]

**Wintering Bees.**

MR. EDITOR:—Would it not be a proper time just now, at the close of this long and severe winter, for bee-keepers to give their experience in wintering bees, through the medium of your valuable JOURNAL? If all would do this, giving the manner of treatment, the kind of hive used, and all the particulars in each case, it would certainly be a source of great benefit to young apiarians. Hoping that all will act upon this suggestion, I will give you my experience.

I had twelve colonies in the fall, all of them Italians—five in Langstroth's movable comb hive, two in Hotchkiss' dividing hive, two in Dr. Eddy's patent hive, and three in movable comb hives changed from common box-hives. Eight of them were strong colonies, with abundance of stores; one medium; two with plenty of bees, but short of stores; and one weak, with very little honey. In October I fed the weak colonies as much syrup, (made by dissolving coffee sugar in hot water and boiling it until all the scum rose and was skimmed off), as they would carry down. Two of the weakest colonies I put into a dark room—with double walls, filled between with dry straw—well ventilated. The remainder I left on their summer stands, removing the honey boxes from all, but leaving the honey-boards on the Langstroth hives without any other preparation for winter.

Now for the result. On the 10th of March I removed the two weak ones from the dark room. One of them was in fine condition, with a small supply of syrup in the combs; but the other one had starved to death. One of the colonies in the Langstroth hive perished from *dysentery*, while all the others are in fine condition, with plenty of honey to last until they can gather from the opening flowers and buds of spring.

One year ago, I wintered all my colonies (five) in a dark room; and I think those I kept in the open air this winter are in as good condition, as they were in the spring, except perhaps a larger percentage of dead bees on the bottom-board.

I have come to the conclusion that there is not so much difference, after all, in the kind of hives you use for wintering bees, if your colonies are strong, with an abundance of stores, and plenty of *upward* ventilation.

GEO. HARDISTY.

MALVERN, O., March 12, 1868.

[For the American Bee Journal.]

**Temper of Bees.**

MR. EDITOR:—As I intend to learn and practice to the extent of my ability, I feel deeply interested in the JOURNAL and all other mediums through which I can communicate with others on the subject of bee-culture.

You did me the favor to publish a few remarks of mine in the JOURNAL for October, 1867. I thank you for the comments on the article referred to. But as I was not sufficiently definite, I will, with your permission, try to explain more fully what I intended to convey.

I did not intend to be understood to say that all the descendants of my queen were hybrids, but will now say that of the three-banded bees, or "Simon Pures," I have had excellent luck, although a few of these queens do not produce all of that stamp.

But my observation and experience does not agree with those who claim that the Italians are more mild than the black bees. On the contrary, with me, those colonies where not a bee can be found with less than three yellow bands are more venomous than those mixed; and the mixed more so than the black bee. And I repeat it will yet be acknowledged that, in proportion as we Italianize our bees, in just that degree will their vindictiveness be increased. "Oh," says Mr. Queenvender, "your bees are not pure; you know nothing about the Italians." Never mind, I only speak of what I have seen; intending to know more, by and by.

I believe it is admitted on all hands that the hybrids are more pugnacious than the black bees, or that black bees are more mild than hybrids. Now the axiom that "like begets like" is contradicted, if this additional ferocity of hybrids is derived from the black parent; because the black parent could not invariably impart more venom than it possessed. Consequently it must have been derived from the Italian parent. This argument cannot be turned against the black bee, because its reputation is established by universal consent, and it is the standard of comparison; while that of the Italian is disputed by very many, and by some very high authority on any bee question.

Again, the claim of those who represent the Italians as such amiable creatures, proves entirely too much, for they give them the reputation of gathering more and better stores, and of being more successful and *resolute* in their defence against other *bees*, and yet *less* disposed to interfere with *man*.

Now, is it possible that a creature governed entirely by instinct, *can* have more resolution to defend against other intruding *bees*, and at the same time *less* resolution to defend against *man* as an intruder? Or are they to be credited with so much sagacity as to enable them to discriminate between one class of intruders and another?

P. PECKHAM.

COLUMBIA CROSS ROADS, PA.

Send us names of bee-keepers with their post office address.

[For the American Bee Journal.]

**Answer to a Correspondent.**

I did not set my bees out for a purifying flight until spring; have set them out sometimes in winter years ago; but avoid doing so now, by keeping equal numbers of bees in each hive, and the right numbers of hives in each room well ventilated, dark, of a uniform temperature. Have kept a dozen hives in the house six months, on trial: they kept well. It will pay to house bees in the working season, when there is a failure of pasturage; have kept them in some parts of all months, except June, for ten days at a time, to save bees and prevent robbing.

The best style of hive for me to use with my knowledge, is a low box, containing frames; as I get on and filled three boxes fifteen inches long, or six or nine shorter ones, as soon as I get the two twelve-inch or four shorter ones on my box hives filled.

I have one hundred box hives with bees in, the remainder of five hundred and fifty; the empty ones piled up for future reference. They are twelve by twelve, fourteen inches high, the bottom edge shaved down to one-fourth inch, ten holes leading into honey-boxes covered with a cap on top; two holes between each comb, and they all straight from front to rear; entrance one-fourth inch by four long at the bottom, one-half inch entrance near the top front side, open when the bees are at work in honey season, at all other times covered with wire screens. A single boarded house is too thin to winter bees in, as it is effected by every change of outside temperature. It will probably do to lath and plaster twice, as that will make two dead air spaces to your thin boarded house. In damp cellars ventilate well both the hives and the cellar room. I have used a cellar that had water stand in it three inches at a time. Of course it was damp the rest of the winter. I have used a thin boarded house, but can make a better one pay. If the feed is bad, or hives or room not well ventilated according to the amount of bees, and they need carrying out to prevent a worse state of affairs, that is, cannot expel the excess of moisture from their bodies, or from the hive, then carry out if the weather is warm. If too cold, put them in a warm, dry room. Ventilate every range of comb thoroughly with wire netting. If the bees are badly troubled, place a wire basket, the larger the better, for them to fly in. After they have evacuated the excess of moisture, and are quiet at dark, they can be returned to their winter quarters. I have more bees in my home apiary than I wish to keep some winters. I have now one hundred and forty in a cellar, one hundred and fifteen in a brick house, sixty in a stone house. Honey is the best, and the season was driest for years. The hives had no rain or snow on them for months. I carried the most of them in, early in fall; generally have them all in by the first of November; generally carry them out March 25th, then carry back part, sometimes the whole stock, until they can work.

ST. CHARLES, ILL. JAMES M. MARVIN.

## THE AMERICAN BEE JOURNAL.

WASHINGTON, APRIL, 1868.

THE AMERICAN BEE JOURNAL is now published monthly, in the City of Washington, (D. C.,) at \$2 per annum. All communications should be addressed to the Editor, at that place.

The Kentucky Bee-keepers' Association will meet in Lexington, on the second Tuesday in April, (14th instant), and will be pleased to see visitors from other States.

The good people of Wenham, in Massachusetts, in town meeting assembled, have voted that bees shall not be kept in their town, because, among other reasons, they (the bees, not the citizens) stole a few pounds of sugar from an upper room, the windows of which had been unwisely left open; and, furthermore, because they made an inroad on a certain kitchen, where odoriferous sweetmeats were being prepared without due caution. For this and other similar peccadillos, the poor bees are banished from the town by a vote of two to one. Thus the irrational creatures are first led into temptation, by the thoughtlessness, or the slovenliness—for it comes to that—of the rational portion of the community, and then banished for obeying the instincts of their nature.

With ordinary care the sugar would have been safe in its box, and confections could have been cooked in the kitchen without annoyance or interference. The sufferers, as they would fain regard themselves, are in reality more to blame than the alleged depredators; having caused all the trouble by first inconsiderately *miseducating* the bees, giving them access to coveted sweets, and allowing them opportunities to visit places from which common prudence and care would have kept them debarred. Thus taught "bad habits" (for that can readily be done), is it surprising that the bees were steadily on the lookout for chances to indulge their appetite, and make a dashing onslaught where a rich quarry was temptingly exposed? It was by indiscreet indulgence at the start, that the trouble *was invited*; for bees will not resort to such spots *in crowds*, till after individuals have been permitted to work the mine long enough to let the news of the discovery of a *placer* become spread abroad. Those thoughtless persons who permit the game to be carried on until the visits become a visitation, must charge the annoyance suffered and the damage sus-

tained to their own ignorance or imprudence. Here too "a stitch in time saves nine," and "prevention is better than cure."

It also becomes a serious question whether careless and slovenly people have a right to ask those engaged in laudable and lawful pursuits to abandon them, that they, despite of slovenliness, may live at ease. It would hardly be fair, indeed, that even sugar refiners and confectioners should be granted an injunction against apiarians, because annoyed and perhaps injured by the bees; for the converse of the case might as properly be urged against them, and the argument be as valid. An apiarian, we apprehend, has as good a right to carry on his business in a community as either of the others. Nay, he might even allege that, besides being a public benefactor, saving that which would otherwise be lost, he is a great sufferer from them by the frequent destruction of his laborers *en masse*.

Do not tempt the bees, and they will not annoy you. Where they are invited to come, they will in time repair in crowds, if they find good accommodations there. If stinging follows, that too is commonly the result of provocation, for bees are not apt to sting when away from their home.

There was a time when, in Europe, the owner of a robbed colony could maintain an action against, and recover damages from, the keeper of the robbing bees. But now, thanks to the diffusion of a more accurate knowledge of facts, the man who there claimed damages in such a case, would be laughed out of court. It has become a well-known and recognized truth, that the owner of the robbed colony is at fault, and has himself to blame for his loss.

But will the Wenhamites gain much by banishing bees from their bailiwick? The metes and bounds of their town do not probably embrace the whole area of the Old Bay State; and if the good people continue to "keep open house," boiling sweetmeats with kitchen doors and windows open, and letting sugar "lie around loose" on the counters of their groceries and the shelves of their pantries, there accessible to outsiders, how are they going to keep out the "winged worshippers" that come from abroad? Is it even certain that those bees which committed the overt acts complained of, belonged to Mr. Gould's apiary? It is the very poorest sort of argument to allege that "an acre and a half of land" could not support a hundred colonies, therefore—*argal!* They, or many, or most of them, may have come from a distance. In this number of the BEE JOURNAL we have an account of a swarm that travelled eight

miles for a lodgement; and we remember reading a story, well vouched for, of bees that flew twelve miles to forage in a buckwheat field! The hosts that were troublesome at Wenham may, for aught that appears, have come from the neighborhood of Squam Beach or Nahant, or even from the granite hills of New Hampshire! Grasshoppers in Kansas fly thrice as far.

But may not some good result from this anti-bee-bellum? If the action of a regular town meeting proves effectual in preventing depredations by bees from abroad, may not those of ants and roaches be in like manner arrested by a formal two-thirds vote? By all means, since they have their hands in, let the voters of Wenham try the experiment!

### Foulbrood Again!

In the concluding portion of the Baron of Berlepsch's essay on foulbrood, given in the March number of the BEE JOURNAL, there is an unfavorable notice of an article on "the origin, nature, and cause" of that disease, by Director Fischer, published in the transactions of the third meeting of German Agriculturists, in 1865. Against that judgment of the Baron, Mr. Fischer protests on the ground that experience has since confirmed and sustained his positions. He further says:—

"I am able to cause the best colony to become foulbroody in the course of a few months, and to cure a diseased colony in a still shorter time. At a suitable season I shall be ready to furnish the proof. The Rev. Mr. Huonder, of Medels-Plata, to whom, under injunction of secrecy, I communicated my prescription for the cure of his foulbroody stocks, wrote to me on the 24th of September, that they were restored to a healthy condition in the course of three or four weeks.

"The nature of foulbrood, its origin and cure, are in no respect mysterious, but entirely in accordance with nature, and as intelligible as any other vital phenomena in the case of bees. To many symptoms, hitherto regarded as secondary only or incidental, due prominence and significance are now assigned. Especially interesting are the physiological importance of chyle, and the structure and function of the organ secreting that substance, which cannot any longer be regarded as the product of digestion in the stomach.

"The practical consequences of the insight now obtained, are far-reaching—even apart from

the proper cure of foulbrood. A gratifying surprise awaits that veteran apiarian, Dzierzon, inasmuch as the fundamental principle of one of the positions inflexibly adhered to by him, is now shown to be in strict consonance with a law of nature."

Director Fischer intimates that he will shortly communicate to the *Bienenzeitung* a sketch of his theory. But if he has made so important a discovery, as he alleges, why not take measures to have it tested in a trustworthy manner by some prominent apiarian, if he does not intend to make the prescription known at present?

### The Kohler Process.

Great bodies in Europe, as well as in America, proverbially move slow. Fearing that if they relied on the action of Government officials to obtain a reasonable remuneration to Mr. Köhler for his process to secure the pure fertilization of Italian queens, when and where common drones abound, the method could not be brought into general use this year, the German apiarians have resolved to make up a sufficient sum by contributions from among themselves. The plan is to have the process communicated to each contributor, by printed instructions, but not to be divulged until such time as shall be agreed upon. This plan was proposed by the Rev. Mr. Kleine, and having been approved by a number of prominent apiarians, subscriptions will be received at the office of the "*Bienenzeitung*" in Eichstädt—each subscriber to specify the sum he is willing to contribute. It is expected that a satisfactory sum will thus be secured by the first of May. The main purpose is to compensate Mr. Köhler, in the first instance, for a discovery so valuable, and then make known the process, *pro bono publico*. This would be just to the discoverer, and liberal to the bee-keeping community.

☞ We have received from the publishers a copy of the catalogue mentioned below. It is the largest, handsomest, most complete, best printed and most profusely illustrated, that has come under our notice; and will be fully worth its cost to farmers and dealers in all parts of the country.

"ALLEN'S CATALOGUE OF AGRICULTURAL AND HOUSEHOLD IMPLEMENTS AND MACHINERY, SEEDS AND FERTILIZERS.—Messrs. R. H. Allen & Co., 189 and 191 Water Street, New York, who conduct the largest business in Agricultural and Horticultural Implements, of all Ameri-

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In our present condition there is no subject so important as the introduction of labor-saving machinery and tools on the farm and in the household."

[For the American Bee Journal.]

### Can Bees Breed without Water?

On the 27th of October last, I introduced an imported queen into a stock of hybrid bees that had, during ten weeks, had a queen whose eggs would not hatch, and which had for this reason a large amount of bee-bread stored up.

On November 10th, before I put this hive into the cellar, I examined it and found that it had sealed brood in three combs. I made another examination about a week later, and found a large number of young bees hatched, and the same amount of brood-comb as before, filled with eggs and young larvæ. I examined again and again, and found that the colony went on breeding, though they could not get any water and I never gave them a drop. They could not get any from condensed vapor, as all this escaped through nine one inch ventilation holes in the honey-board. To-day, January 13th, I examined again, and found the last set of brood nearly all hatched, and every cell that was before occupied by brood, filled with eggs or larvæ. The bees appeared very lively and healthy, and had increased to triple their original numbers.

Can any one explain where these bees got the moisture wherewith to nurse their brood, if they need any besides what is contained in the honey? The temperature in my cellar is, and has been, excepting a few days, from 34° to 44°—F. I have not offered any water to any of my colonies this winter; but did so repeatedly last winter, though not one drop of it was ever consumed by any of them. From this observation I came to the conclusion that bees do not need any water when kept in a cool cellar, and that they can breed without it; but that they must have bee-bread to feed their brood. The stock referred to had to-day nearly the whole of its large supply of bee-bread consumed.

Three years ago, I wintered one hundred and seventy swarms in the cellar of my dwelling house, in which the temperature ranged from 45° to 52° F, excepting on a few days near the first of January. Here the bees seemed very thirsty, and drank water very freely. A number of stocks, however, which I did not supply with water, had a small lot of sealed brood on the 25th of March, when I took them out of the cellar. They showed no signs of dysentery, and

their abdomens were as slender almost, as when they were first put in the cellar. They, however, were very restless, and many were lost by leaving the hive. I therefore would not advise bee-keepers to keep bees in cellars, the average temperature of which is higher than 34° to 44° F.

A. GRIMM.

JEFFERSON, Wis., Jan. 13, 1868.

[For the American Bee Journal.]

### Sending Queens by Mail.

Having succeeded in sending a few queens by mail, in the fall of 1867, I am encouraged to further trial. The box I use for this purpose costs so much less than the one sent by express, that I can better afford to make it and pay postage, than furnish the one heretofore used.

If I continue to succeed in this method, I will describe the box I consider best—having tried several.

Although this idea is original with myself, I shall not patent it; and one object in referring to it here, is to prevent others doing so.

ST. JOHNSVILLE, N. Y. M. QUINBY.

[For the American Bee Journal.]

### Varronian Theory.

Prof. Varro's article of five columns, beginning on page 144 of the BEE JOURNAL, I suppose when reduced to common English, means to say that the egg of a queen-bee must form a component part of the food of a young queen in the incipient stages of her being. His theory is very ingenious, but unfortunately there are a few facts with which it seems to come in collision. Any one may test the principle by shutting up a quart or more of bees, most of which should be quite young—Italians are preferable. Give them a few combs in which is sufficient honey to last a few days; see that there is not a cell containing an egg—using combs that were taken from the bees last fall, if convenient. Now, from some populous hive, cut a piece of comb two inches long by half an inch wide, which shall contain nothing but larvæ hatched about two days. I often get such a piece six inches square. Fit this piece in a middle comb, as directed in "Bee-keeping Explained," page 323. Said piece will contain about thirty grubs. Confine the bees to this for two or three days. At the end of this time, there will be half-finished queen cells, containing young queens and a full supply of food. In a day or two more, after the bees are let out, such cells will be finished, and in due time bring forth perfect queens. Where a large number of nuclei is started in this way, they will average about four cells each. Three-fourths of all the queens I raise are managed just in this way. Now, will the gentleman explain when and how the eggs for feeding these queens were obtained? Let it be in language we can all understand, differing somewhat from the article on page 144, in which a fastidious sense might almost detect a trace of pedantry.

M. QUINBY.

ST. JOHNSVILLE, N. Y.

[For the American Bee Journal.]

**That Discovery.—Who will Explain?**

The opinion seems to prevail that friend Quinby originated the plan of using two tiers of boxes for surplus honey. Friend Langstroth I observe has also this opinion. See B. J., vol. 3, page 149, where he says—"Make the cover eleven inches deep, that two tiers of boxes may be used, on the plan first suggested by Mr. Quinby."

The *Italics* are mine. Now this plan may have been "first suggested by Mr. Quinby," but where is the proof? I ask the question as a matter of apistical history, and would be pleased to see the question settled, and the answer recorded in the AMERICAN BEE JOURNAL. I am perfectly willing that Mr. Quinby shall have all the credit that belongs to him; but let us give the honor, if such it be, "to whom the honor is due."

Now, perhaps friend Quinby himself does not claim the discovery. Here is a revised copy of the "Mysteries," rewritten in 1865. We will see what he says on this subject. On page 62 and 140, I find this language:—

"The height of the cover should be seven inches, but where a double tier of boxes is used, it must be made fit?"

"Occasionally a colony will have too many bees to work to advantage in one set of boxes. In such a case, after the first are well advanced, raise them up, with the holes of communication through the top and bottom."

Certainly there is nothing in the above to show that the plan of using a "double tier of boxes," originated with this author. I may be mistaken, but do not think another sentence on this subject, can be found in the "Mysteries."

Thus it seems that Mr. Quinby does not attach much importance to the *discovery*, or he would, without question, have had more to say about it. It will be observed that *occasionally* we will have colonies strong enough to work in two sets of boxes at one time. This may be true in the East, where foulbrood exists, but not in this section. In many parts of the West, every strong colony, if kept from swarming, will need two sets of boxes.

M. M. BALDRIDGE.

ST. CHARLES, ILL.

[For the American Bee Journal.]

**Explanation Desired.**

I notice in the March number of the BEE JOURNAL, page 170, that fears are expressed by W. W. Baldridge, that foulbrood has been introduced into some of the apiaries of Iowa. This strikes me with much surprise, for I believe that I am well acquainted with all apiarians of any note in this State, being in constant communication with all leading bee-keepers. I have never heard of a single case of foulbrood in this State, nor of anything which could possibly be mistaken for it. Indeed I have never known any disease among bees here. It has been a matter of congratulation among us, that bees

are so universally vigorous and healthy. Since Mr. Baldridge claims such knowledge, I call upon him to give the readers of the BEE JOURNAL the names of the persons in whose apiaries the disease is found, and the proof that such is the case. I can hardly believe that any person who knew that the disease was among his bees, would send queens away. Certainly I know of no Iowa bee-keeper who could be guilty of the crime—for I can give it no milder name. If any have been unfortunate enough to receive the pestilence with a queen from abroad, they should have the sympathy of all. Please, Mr. Baldridge, give us the names and facts, instead of "fears" and insinuations.

ELLEN S. TUPPER,  
In behalf of all Iowa bee-keepers.

[For the American Bee Journal.]

**Bee Feeders.**

I see that Mr. Hunter, of Piqua, asks for information regarding an invention for feeding bees, and also inquires how he shall "feed bees in the Langstroth hives." I do not know what apparatus was meant by the writer in the *Rural New Yorker*, but can inform Mr. Hunter, that Mr. Edward Harrison, of Springfield, Ohio, has the most perfect thing I have ever seen for feeding bees, adapted to any form of hive. It is simple, cheap, and perfectly constructed, so as to prevent any interference from robber bees, and can be so adjusted that the bees of the cluster may have access to it in the coldest weather, with safety and ease.

I do not know Mr. Harrison's present address. He should certainly advertise his feeder, and introduce it to all bee-keepers. Probably Colonel Leffel, of Springfield, could give information of Mr. H.'s address.

E. S. T.

[For the American Bee Journal.]

**Wanted!**

A good method of destroying the drones of such hives as we do not wish to breed from. Something applicable alike to common and movable comb hives, and not patented.

It should be capable of being attached to a hive, without injuring it if left undisturbed several days. Breeders of queens could then prevent the flying of all the drones in the neighborhood which are undesirable for breeding purposes, provided all the owners gave their assent.

I have a device in view, and if on trial it proves a success, will inform your readers, unless a better plan is offered. EXPERIMENTER.

Send us names of bee-keepers with their post office address.

Want of room constrains us to postpone to next month a number of communications now on hand.